U.S. Department of Energy
Office of River Protection
Mr. Michael K. Barrett
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

CCN: 020879

Dear Mr. Barrett:

CONTRACT NO. DE-AC27-01RV14136 –APPROVAL OF AUTHORIZATION BASIS CHANGE NOTICE ABCN-24590-01-00005, "SRD AND ISMP CHANGES SUPPORTING IMPLEMENTATION OF THE RPP FOR DESIGN AND CONSTRUCTION"

References: 1) CCN 020589, Letter, R. F. Naventi, BNI, to W. J. Taylor, ORP, "Authorization Basis Reconciliation Commitment," dated June 11, 2001.

2) CCN 018459, Letter, R. F. Naventi, BNI, to W. J. Taylor, ORP, "Bechtel National, Inc., Response to the Office of Safety Regulation Second Set of Questions Regarding the Radiation Protection Program, Revision 5A," dated March 05, 2001.

3) CCN 018462C, Letter, W. J. Taylor, ORP, to M. P. DeLozier, CH2M Hill Hanford Group, Inc. "Office of Safety Regulation Question Set Two Concerning the CH2M HILL Hanford Group, Inc., Radiation Protection Program for Design and Construction, Revision 5A," 01-OSR-0017, 0100550, dated February 01, 2001.

Enclosed please find Authorization Basis Change Notice (ABCN) ABCN-24590-01-00005, Revision 0, for your review and approval. This ABCN addresses all the authorization basis (AB) conflicts identified in Reference 3. It also addresses additional conflicts identified by Bechtel National, Inc. (BNI) while conducting the AB review committed to in Reference 2.

Reference 1 informed the U.S. Department of Energy, Office of Safety Regulation (OSR) of BNI's intent to delay submittal of ABCN-24590-01-00005 until July 31, 2001, in order to resolve the control room emergency exposure design limit issue. Since the current control room emergency exposure design limit does not present a conflict with any of the approved AB documents, BNI removed this issue from ABCN-24590-01-00005 and will resolve it separately. This change is needed to resolve all AB conflicts prior to the start of limited construction. An ABCN addressing only the control room emergency exposure design limit will be issued for OSR review no later than July 31, 2001.

Authorization Basis Change Notice

ABCN Number ABCN-24590-01-00005 Revision 0

ABCN Title SRD and ISMP Changes Supporting Implementation of the RPP for Design and Construction

I. ABCN Review and Approval Signatures

A. ABCN Preparation

Preparer:	G. Simiele		
	Print/Type Name	*Signature*	*Date*
Reviewer:	S. Henry		
	Print/Type Name	*Signature*	*Date*

B. Required Reviewers

Review Required? *For each person checked Yes, that signature block must be completed.*

☒	ES&H Manager	F. Beranek		
		Print/Type Name	*Signature*	*Date*
☒	QA Manager	G. Shell		
		Print/Type Name	*Signature*	*Date*
☒	PSC Chair	B. Poulson		
		Print/Type Name	*Signature*	*Date*
☐	Operations Manager			
		Print/Type Name	*Signature*	*Date*
☐	Engineering Manager			
		Print/Type Name	*Signature*	*Date*
☐	Pretreatment APM			
		Print/Type Name	*Signature*	*Date*
☐	LAW APM			
		Print/Type Name	*Signature*	*Date*
☐	HLW APM			
		Print/Type Name	*Signature*	*Date*
☐	BOF APM			
		Print/Type Name	*Signature*	*Date*
☐	Construction Manager			
		Print/Type Name	*Signature*	*Date*
☐	Business/Project Controls Manager			
		Print/Type Name	*Signature*	*Date*
☒	ALARA PSC Subcommittee Chair	M. Perks		
		Print/Type Name	*Signature*	*Date*

C. ABCN Approval

WTP Project Manager	R. Naventi		
	Print/Type Name	*Signature*	*Date*

Authorization Basis Change Notice

ABCN Number ABCN-24590-01-00005 Revision 0

ABCN Title SRD and ISMP Changes Supporting Implementation of the RPP for Design and Construction

II. Description of the Proposed Change to the Authorization Basis

D. Affected AB Documents:

Title	Document Number	Revision
Safety Requirements Document Volume II	BNFL-5193-SRD-01-02	4
Integrated Safety Management Plan	BNFL-5193-ISP-01	6

Decision to Deviate ☐ Yes ☒ No

If yes, DTD Number _____ Deficiency Report Number _____

Initiating Document Number BNFL-TWP-SER-003 Revision 7

BNI Letter from R. Naventi to W. J. Taylor, ORP, "BNI Response to OSR Second Set of Questions Regarding the RPP, Rev. 5A," CCN 018459 dated 3/5/01.

E. Describe the proposed changes to the Authorization Basis Documents:

BNFL-5193-SRD-01-02, Rev 4, Safety Requirements Document Volume II:

Safety Criterion 5.1-1. Delete safety criterion.

Safety Criterion 5.1-3. Delete safety criterion.

Safety Criterion 5.1-4. Delete safety criterion.

Safety Criterion 5.1-5. Delete safety criterion.

Safety Criterion 5.1-6. Delete safety criterion.

Safety Criterion 5.1-7. Delete safety criterion.

Safety Criterion 5.4-10. Delete 3rd sentence of Note 2. Revise 4th sentence of Note 2 to read "The RPP describes the plans and measures for compliance with the survey and contamination control requirements of 10 CFR 835."

Safety Criterion 7.7-6. Delete reference to 10 CFR 835 under Regulatory Basis.

BNFL-5193-ISP-01, Rev. 6, Integrated Safety Management Plan:

Table of Contents. Add "(this section has been deleted)" to end of TOC entry for section 2.3.2.

Section 1.3.8, Page 1-15. Rewrite last paragraph to read "Additional details on the radiological exposure standards applied to the public and workers are provided in Appendix D of BNFL-5193-SRD-01-02, Safety Requirements Document Volume II, which also provides information on the basis for the assumed location of the receptors."

Section 2.3. Rewrite sentence to read "Implementation of 10 CFR 835 and the radiation protection program is described in this section."

Section 2.3.1, 1st sentence. Rewrite sentence to read "BNI will be in full compliance with the applicable sections of 10 CFR 835 as discussed in the RPP."

Section 2.3.1, 2nd sentence. Rewrite sentence to read "A radiological controls program that implements the requirements of 10 CFR 835 and additional requirements specified in SRD Volume II Chapter 5.0, *Radiation Protection,* is established."

Section 2.3.1. Delete sentence that references the ISAR.

Section 2.3.2. Delete entire section.

Authorization Basis Change Notice

ABCN Number ABCN-24590-01-00005 Revision 0

ABCN Title SRD and ISMP Changes Supporting Implementation of the RPP for Design and Construction

E. Describe the proposed changes to the Authorization Basis Documents:

Section 2.3.3, Page 2-4. Replace last paragraph with "The RPP is managed and controlled through the establishment of procedures developed according to the requirements of the QAP."

Section 3.3.1.6. Delete last sentence.

Section 3.9.1.2, Page 3-22. Delete 1st sentence.

Section 3.9.2, 1st paragraph. Rewrite 3rd sentence to read "The ALARA guidance is derived from federal and commercial nuclear operating experience as well as from industry standards such as NRC Regulatory Guide 8.8, *Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations will be As Low as is Reasonably Achievable* (NRC 1978) and DOE G 441.1-2, "*Occupational ALARA Program Guide*."

Section 4.1.2.3. Rewrite paragraph to read "The Radiation Protection Program addresses the protection of the public and workers (when accessing controlled areas) in accordance with 10 CFR 835, *Occupational Radiation Protection*. The Environmental Radiation Protection Program addresses the protection of the public and environment from normal activities that may release radiological effluents. These programs are defined in the SRD Volume II, Chapter 5.0, *Radiation Protection*."

Table 4-1, Chapter 5.0, item 1. Delete last sentence.

Table 4-1, Chapter 5.1. Rewrite the 2nd sentence under the Addition or Subtraction column to read "DOE guidance such as DOE G 441.1-2, *Occupational ALARA Program Guide*, will also be used to develop the RPP-WTP ALARA program for normal operation."

Table 4-1, Chapter 5.1. Delete 3rd sentence under the Addition or Subtraction column.

Table 4-1, Chapter 5.1. Rewrite the sentence under the Basis column to read "DOE practices have proven to be successful for facilities similar to the RPP-WTP."

F. List associated ABCNs and AB documents:

ABCN-W375-00-00049, Rev. 1 describing BNFL-TWP-SER-003, *Radiation Protection Program for Design and Construction*.

G. Explain why the change is needed:

The affected AB documents require changes to ensure consistency with BNFL-TWP-SER-003, Rev. 7, *Radiation Protection Program for Design and Construction*.

H. List the implementation activities and the projected completion dates:

Activity		**Date**
Inform DOE that AB has been revised	ABCN will be submitted for DOE approval	
Distribute revised pages	30 days following DOE approval	
Provide updated electronic version of AB to DOE	30 days following DOE approval	

Revise the following implementing documents:

	Documents	**Describe extent of revisions**	**Date**
1	DCD	Deletion of affected Safety Criteria	
2			

Authorization Basis Change Notice

ABCN Number ABCN-24590-01-00005 Revision 0

ABCN Title SRD and ISMP Changes Supporting Implementation of the RPP for Design and Construction

	Describe other activities:	**Date**
1	None	
2		

III. Evaluation of the Proposed Change

I. Is DOE prior approval required?

1 Does the revision involve the deletion or modification of a standard previously identified or established in the SRD? **Yes** ☒ **No** ☐

Explain

The proposed change deletes safety criteria redundant with 10 CFR 835 requirements addressed in the Radiation Protection Program for Design and Construction.

The proposed change revises the discussion regarding the RPP scope's applicability to contamination monitoring of the construction site to appropriately reference the RPP for Design and Construction.

The proposed change deletes reference to an outdated section of 10 CFR 835 found in the Regulatory Basis listing for Safety Criterion 7.7-6 regarding occurrence reporting.

2 Does the revision result in the reduction in commitment currently described in the AB? **Yes** ☒ **No** ☐

Explain

The proposed revision deletes reference to the BNFL Corporate ALARA Program as a basis for development of the WTP ALARA program.

The proposed revision deletes ISMP references to ISAR Chapter 3.0, Conduct of Operations, Chapter 5.0, Radiation Safety, and to the RPP outline found in ISAR Appendix 5A.

The proposed change deletes several SRD Safety Criteria that address fundamental aspects of the radiation protection program required under 10 CFR 835, Occupational Radiation Protection.

3 Does the revision result in a reduction in the effectiveness of any procedure, program, plan, or management process described in the AB? **Yes** ☐ **No** ☒

Explain

The proposed changes will not reduce the effectiveness of the radiological safety program and will ensure consistency with the RPP for Design and Construction.

J. Complete the safety evaluation by describing how the revision to the AB:

1 will continue to comply with all applicable laws and regulations, conform to top-level safety standards, and provide adequate safety

The proposed changes will ensure consistency with the RPP for Design and Construction, thereby assuring compliance with 10 CFR 835, Occupational Radiation Protection.

2 will continue to conform to the original submittal requirements associated with the AB documents being revised

The proposed changes conform to the original submittal requirements to describe a radiological safety program that conforms with top-level safety standards and complies with 10 CFR 835, Occupational Radiation Protection.

3 will not result in inconsistencies with other commitments and descriptions contained in the AB or an authorization agreement

The proposed changes are necessary to ensure consistency with the RPP for Design and Construction. The proposed changes do not affect other AB documents or authorization agreements.

K. Justification of the Proposed Change

Provide a justification that demonstrates that the proposed change is safe

The proposed revision deletes reference to the BNFL Corporate ALARA Program as a basis for development of the WTP ALARA program in favor of DOE G 441.1-2, *Occupational ALARA Program Guide*. The DOE guidance provides an acceptable basis for development of the WTP ALARA Program that will continue to ensure adherence to top-level safety principles.

The proposed revision deletes references to the RPP outline found in ISAR Appendix 5A. The basis for the subject outline was to facilitate transition to NRC regulation under 10 CFR 20, "Standards for Protection Against Radiation." The content found in the current RPP for Design and Construction addresses all applicable 10 CFR 835 requirements.

The proposed change also deletes reference to ISAR Chapter 3.0, Conduct of Operations, and Chapter 5.0, Radiation Safety, regarding the implementation of 10 CFR 835. BNI Radiation Protection Program commitments are provided in the RPP and reference to the ISAR is redundant. Since the affected ISAR descriptions are outdated and are not planned to be brought up to date, deleting them is intended to avoid inadvertent reference to inaccurate or out-of-date descriptions.

The proposed change deletes several SRD Safety Criteria that address fundamental aspects of the radiation protection program required under 10 CFR 835, Occupational Radiation Protection. Since the RPP for Design and Construction now addresses all applicable 10 CFR 835 requirements, the subject SRD criteria are redundant with both 10 CFR 835 and the RPP. Consequently, their deletion will not alter the radiation protection program or result in a reduction in the commitment to develop and implement an adequate radiological safety program.

Attachments

1 BNFL-5193-SRD-01-02, *Safety Requirements Document Volume II,* proposed changes
2 BNFL-5193-ISP-01, *Integrated Safety Management Plan,* proposed changes

5.0 Radiation Protection

Safety Criterion: 5.0 - 1

A Radiation Protection Program (RPP) compliant with 10 CFR 835 shall be developed and submitted for approval to DOE.

The RPP-WTP Radiological Controls Program shall address all items in 10 CFR 835 and the additional Safety Criteria provided in SRD Volume II Sections 5.1 and 5.2.

Implementing Codes and Standards

DOE G 441.1-1, Management and Administration of Radiation Protection Programs Guide

Regulatory Basis

10 CFR 835	*Occupational Radiation Protection Location: 101(a-f)*	
DOE/RL-96-0006	*4.2.3.1*	*Radiation Protection-Radiation Protection Practices*
DOE/RL-96-0006	*4.3.2.1*	*Radiation Protection-Radiation Practices*
DOE/RL-96-0006	*4.3.2.2*	*Radiation Protection-Procedures and Monitoring*

5.1 Occupational Radiation Protection

Safety Criterion: 5.1 - 1

This safety criterion has been deleted.

Safety Criterion: 5.1 - 3
This safety criterion has been deleted.

Safety Criterion: 5.1 - 4
This safety criterion has been deleted.

Safety Criterion: 5.1 - 5
This safety criterion has been deleted.

Safety Criterion: 5.1 - 6

This safety criterion has been deleted.

Safety Criterion: 5.1 - 7
This safety criterion has been deleted.

Safety Criterion: 5.4 - 10

An environmental surveillance program shall be developed and implemented to include:

(1) Meteorological data acquisition (Note 1)

(2) Pre-operational evaluation (Note 2)

(3) Near-Facility Monitoring (Note 3)

(4) Ground Water Protection (Note 4)

Implementing Codes and Standards

ANSI/ISO-14001-1996, Environmental Management Systems - Specification with guidance for use

IAEA Safety Series No 41, *Objectives and Design of Environmental Monitoring Programmes for Radioactive Contaminants*

Notes:

1. BNFL-5193-ID-03, *Interface Control Document*, Revision 2, *ICD-22 between DOE and BNFL Inc. for Air Emissions*, Table 2 states that DOE will maintain the Hanford Site Air Operating Permit (AOP) and provide access to meteorological data.
2. BNFL-5193-ID-03, *Interface Control Document*, Revision 2, *ICD-09 Between DOE and BNFL Inc. for Land Siting*, Table 1, describes specific interfaces responsibilities for the RPP-WTP contractor and for the DOE. Item 12 of the table requires that the RPP-WTP contractor perform any additional site characterization work beyond that which was performed by the DOE. The RPP describes the plans and measures for compliance with the survey and contamination control requirements of 10 CFR 835.
3. As described in BNFL-5193-ID-03, *Interface Control Document*, Revision 2, *ICD-22 between DOE and BNFL Inc. for Air Emissions*, DOE will continue to operate site and near-facility monitoring networks in the vicinity of the RPP-WTP site. Additional monitoring which is required will be provided by the RPP-WTP contractor. If additional monitoring is required, it will be performed consistent with the Hanford Site near-facility monitoring program for inclusion in site annual reports (example, HNF-EP-0573-6, *Hanford site Near-Facility Environmental Monitoring Annual Report, Calendar Year 1997*).
4. BNFL-5193-ID-03, *Interface Control Document*, Revision 2, *ICD-09 between DOE and BNFL Inc. for Land Siting*, Section 3.3, Ground Water Monitoring Wells, states that that the DOE will "…close groundwater monitoring well E25-32 prior to the start of site work…" There is no liquid discharge to the environment from RPP-WTP operations. Transfer piping to the Effluent Treatment Facility is by means of a three-inch pipe encased in a 6-inch pipe. Potential leakage from the transfer pipe is contained, and collected by the outer pipe. Accidental release of the inner pipe contents would be detected by the transfer pipe leak detection equipment. If both inner and outer pipes failed, such leakage could result in soil contamination which would be remediated prior to any contamination reaching the ground water.

Regulatory Basis

DOE/RL-96-0006	*3.2*	*Radiation Protection Objective*
DOE/RL-96-0006	*4.2.3.1*	*Radiation Protection-Radiation Protection Practices*

(8) A thorough and complete description of what occurred or the defect reported, including a sequence of events and a description of failures (or potential failures and the safety significance with respect to defect identification), so that regulatory and contractor personnel, not familiar with the facility-specific design features or administrative controls employed, can understand the complete occurrence and any substantial safety hazard which could result

(9) Operational status of the facility or equipment at the time of the occurrence, including the status of structures, systems, or components that were inoperable at the start of the event and that contributed to the event

(10) Immediate or remedial actions taken to place the facility, system, or equipment in a safe, stable condition, to return them to service, or to correct or alleviate the anomalous condition, and the results of those actions

(11) Cause of the occurrence, including direct and contributing causes and the root cause

(12) Recommendations about whether further evaluation is required and, if so, before or after returning the facility to operation

(13) Action taken or planned to correct the problem and the identified cause and to prevent recurrence

(14) Impact of the occurrence on the environment, health and safety of workers, the public, and on-site and off-site environs (including quantities and types of radioactive materials released)

(15) Levels and types of contamination, human exposures, and known or projected environmental, safety, and health impacts

(16) Impact of the occurrence on the affected program and/or project

(17) Impact of the occurrence on the adequacy of national codes and standards and regulatory requirements

(18) Lessons learned from the occurrence that could be of importance to other facility operators or that shall be addressed in personnel training or facility procedures

(19) Any previous similar events at the same facility that are known to the Facility Manager

(20) The name and telephone number of a person within the Facility Manager's organization who is knowledgeable about the occurrence

Implementing Codes and Standards

BNFL-5193-ISP-01 Integrated Safety Management Plan
Section: 1.3.17 Incident Investigations

Regulatory Basis

DOE/RL-96-0006 4.3.1.8 Conduct of Operations-Operational Events

CONTENTS

The worker accident risk goal is stated in DOE/RL-96-0006 as, "The risk, to workers in the vicinity of the Contractor's facility, of fatality from radiological exposure that might result from an accident should not be a significant contribution to the overall occupation risk of fatality to workers" (DOE-RL 1996b, Section 3.1.3). This goal is satisfied by calculating the risk of facility operation to the workers at the RPP-WTP. This is a best-estimate analysis based on realistic input and modeling assumptions. In performing this analysis, all SSCs capable of preventing or mitigating the event are considered. The evaluation of the availability and reliability of the SSCs include factors such as failures to start and failures to operate, as well as unavailability resulting from maintenance activities. Accident prevention and mitigation controls are added to the design as necessary to satisfy the worker accident risk goal.

If credit is taken for operator action to satisfy the worker radiological exposure standards of Table 1-2, adequate radiation protection is provided to permit access and occupancy of the control room or other control locations under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body gamma and 30 rem beta skin for the duration of the accident. If credit is taken for operator action to satisfy worker chemical exposure to EPRG-2 limits (AIHA 1988), provisions are made so that the operator exposure does not exceed the EPRG-2 limits.

Additional details on the radiological exposure standards applied to the public and workers are provided in ~~TWRS-P Privatization Project: Radiological and Nuclear Dose Standards for Facility and Co-Located Workers (BNFL 1997c). This reference~~Appendix D of BNFL-5193-SRD-01-02, *Safety Requirements Document Volume II*, which also provides information on the basis for the assumed location of the receptors.

1.3.9 Quality Assurance Program

The quality assurance program (QAP) is an important tool in achieving the goal of the safe operation of the RPP-WTP. The QAP defines the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work to be performed. The Project developed its quality assurance program (QAP) in compliance with the requirements of 10 CFR 830.120, "Quality Assurance Requirements", so the integration of the QAP for the TWRS-P Project began during the initial phases of the project. The QAP for Part A has been submitted to and approved by the U.S. Department of Energy (DOE) (Sheridan 1997). The QAP for Part B activities has been submitted to DOE; this version (BNFL 1998c) has been approved by the DOE Regulatory Unit (Gibbs 2000). As a result of early development of the QAP, the PHA, SRD, and HAR were developed in accordance with the requirements in the QAP. The application of the requirements of the QAP continues during design, procurement, construction, commissioning, inspections, operations, maintenance, modifications, and deactivation of the facility. Administrative processes such as training, procedure development, and configuration management are subject to the requirements of the QAP. The QAP is used by the Project team to ensure that all aspects of the integrated safety approach have been implemented for the Project.

The QAP requires periodic assessments of activities, both by management and by knowledgeable, independent personnel, as described in QAP sections 9 and 10. The conduct of audits to objectively evaluate the effectiveness and proper implementation of the QAP for activities affecting quality of SSCs and surveillances of specific project activities (e.g., process controls, preparation of safety documentation, configuration and document control, and records management) to supplement the compliance audit program are also described in the QAP. The QAP also describes the process of qualifying personnel who perform assessments, audits, and surveillances, as well as documentation of results and review by management.

The process by which the QAP is integrated into Project activities is discussed in ISMP Section 1.3.9, "Quality Assurance Program", and Section 3.5, "Quality Assurance Program". Updating the QAP is addressed in ISMP Section 3.3.3, "Changes to the Authorization Basis". Safety Requirements Document (SRD) Volume II, Section 7.3, "Quality Assurance Program (QAP)", provides criteria for the QAP. ISAR Section 3.3, "Quality Assurance", describes the essential features of the QAP and planned actions to demonstrate and ensure that the Project meets the requirements of 10 CFR 830.120 as presented in BNFL-5193-QAP-01 (BNFL 1997a and 1998c). ISAR Section 3.3 also relates activities to quality by organizations that provide equipment, services, and support to the Project.

2.3 Compliance with 10 CFR 835, "Occupational Radiation Protection"

Implementation of 10 CFR 835~~, a potential exemption request from this regulation,~~ and the radiation protection program ~~are~~ is described in this section.

2.3.1 Implementation of 10 CFR 835

BNI will be in full compliance with the applicable sections of 10 CFR 835 as discussed in the RPP. A ~~radiation protection~~radiological controls program that implements the requirements of 10 CFR 835 and additional requirements specified in SRD Volume II Chapter 5.0 "Radiation Protection" is established. The program includes the following components:

1) Implementation of the as low as reasonably achievable (ALARA) design goal
2) Development of the Radiation Protection Program (RPP) and implementing procedures
3) Training of personnel to the RPP and procedures
4) Selection of qualified personnel to ensure safe work performance in radiological environments
5) Maintenance of records
6) Performance of reviews and audits
7) Implementation of a lessons-learned program
8) Respiratory protection
9) Sealed sources
10) Solid radioactive waste storage, packaging, and handling

~~Details on these administrative controls is provided in ISAR Chapter 3.0, "Conduct of Operations", and Chapter 5.0, "Radiation Safety".~~

Updating of the RPP is addressed in ISMP Section 3.3.3, "Changes to the Authorization Basis".

2.3.2 Potential Exemption Request (this section has been deleted)

~~In the development of the RPP outline provided in ISAR Appendix 5A, a potential exemption from the requirements of 10 CFR 835 has been identified for consideration in Part B under the provisions of 10 CFR 820, Subpart E, "Exemption Relief". Title 10 CFR 835, Subpart E", Monitoring in the Workplace", includes the following requirement relative to dosimetry performance and calibration.~~

~~Sec. 835.402, Individual Monitoring.~~

~~(b) "Personnel external dosimetry programs will be adequate to demonstrate compliance with Sec. 835.202, including routine dosimeter calibration and conformance with the requirements of the DOE Laboratory Accreditation Program for Personnel Dosimetry".~~

~~Subpart F, "Survey and Monitoring" of 10 CFR 20, "Standards for Protection Against Radiation", allows for the use of the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institute of Standards and Technology for the calibration of personnel dosimetry.~~

~~External dosimetry programs are expected to be accredited by the DOE Laboratory Accreditation Program (DOELAP) according to 10 CFR 835.402. To achieve maximum flexibility and develop an equivalent dosimetry program quality with consideration given to transitioning to the U.S. Nuclear Regulatory Commission (NRC) as the regulator, the Project wants the option of using a vendor accredited in either the NVLAP as allowed by 10 CFR 20.1501 or the DOELAP programs. The differences in the programs are slight: the DOELAP program criteria are more restrictive in some categories. However, the NVLAP program is compliant with ISO 9002, "Quality Systems – Model for Quality Assurance in Production and Installation, and Servicing", whereas this is not the case for DOELAP.~~

2.3.3 Radiation Protection Program

Title 10 CFR 835.101, "Radiation Protection Programs", requires submittal of an RPP that includes the following components:

1) Content that is commensurate with the nature of the activities performed and that includes formal plans and measures for applying the ALARA process to occupational radiation exposure
2) Specification of existing or anticipated operational tasks intended to be within the scope of the RPP
3) A program that addresses, but is not necessarily limited to, each requirement of 10 CFR 835
4) A program that includes plans, schedules, and other measures for achieving compliance with the requirements of 10 CFR 835

~~The outline for the RPP is provided in ISAR Appendix 5A, "Radiation Protection Program Outline". When the RPP is developed in Part B, the requirement of 10 CFR 835 for the development of an RPP will be satisfied. Section 2.8, "RPP Maintenance", of the RPP will describe the process for modifying the program to maintain the RPP current with regulatory changes and to take advantage of performance improvement opportunities~~The RPP is managed and controlled through the establishment of procedures developed according to the requirements of the QAP.

Adherence to the DOE-approved QAP also ensures the following.

1) DOE mission and objectives related to Project are effectively accomplished.
2) Products and services are safe, reliable, and meet or exceed the requirements and expectations of the user.
3) Hazards to the public and workers are minimized.

The extent to which quality requirements are applied to the Project is based on a graded approach, reflecting the safety implications of the activity. Quality-related activities performed by organizations providing equipment, services, or support to the Project are conducted in accordance with the requirements documented in the approved QAP.

Additional information on the QAP is provided in ISMP Section 3.5, "Quality Assurance Program (QAP)". Additional information on the audit and management assessment aspect of the QAP is provided in ISMP Section 5.4, "Compliance Audits", and Chapter 10.0, "Assessments".

3.3.1.6 Radiation Protection Program (RPP)

The occupational RPP documents the program standards, requirements, administrative controls, responsibilities, and authorities associated with the scope of RPP-WTP radiological activities. The RPP is the program required by 10 CFR 835, "Occupational Radiation Protection". The RPP provides the regulatory technical basis that ensures the radiological safety of facility workers, collocated workers, facility visitors, and the onsite members of the public. Additional information on the RPP is provided in ISMP Section 2.3, "Compliance with 10 CFR 835, Occupational Radiation Protection". ~~The outline for the RPP included in ISAR Appendix 5A, "Radiation Protection Program Outline", has been developed to facilitate transition to U.S. Nuclear Regulatory Commission (NRC) as the regulator and the need to comply with 10 CFR 20, "Standards for Protection Against Radiation"~~.

3.3.1.7 Emergency Plan

The Emergency Plan, describing the provisions for responses to operational emergencies, documents the Emergency Management Program. All aspects of the Project Emergency Management Program (EMP) as required by DOE and applicable federal, state, and local requirements are addressed. The EMP, an element of an integrated and comprehensive DOE Emergency Management System (EMS) (DOE 1995a), is designed to address emergency planning, preparedness, response, recovery, and readiness assurance activities. The DOE system considers emergency conditions that might place individuals at risk; which goes beyond radiological hazards. In addition, the relationships of the EMP to existing DOE Headquarters, DOE Richland Operations Office, and Hanford Site Contractors' programs, are documented in the Project Emergency Plan. A discussion of critical interfaces and the division of responsibility among these different agencies is included in the Emergency Plan. The elements of the Emergency Plan are designed to ensure that the Project, as part of the overall DOE EMS, is prepared to respond promptly, efficiently, and effectively to any emergency to protect the public and workers.

~~These features are provided in a manner that facilitates transition to the NRC as the regulator, including the need to comply with the requirements of 10 CFR 20, "Standards for Protection Against Radiation".~~

Radiation protection features such as facility zoning, minimum shielding requirements, and access control features will be documented on applicable facility layout drawings and other design documents. These documents are reviewed to ensure that the requirements are met. Details, such as penetrations are analyzed to ensure that potential streaming paths are identified and properly shielded.

3.9.1.3 Radiation Monitoring

Fixed area radiation monitoring is provided in areas where the area exposure rates may change suddenly. These sudden changes may be a result of process operation or maintenance activities. Continuous air monitors are provided in accessible locations where concentrations of airborne radionuclides may vary. Air sampling capability is also provided. Effluent sampling is provided as necessary to demonstrate compliance with regulations. The radiation monitoring locations will be shown on drawings developed during detailed design.

3.9.2 ALARA Design

Project procedures are established to implement an ALARA program. These procedures include guidance on ALARA design considerations appropriate to the facility and delineate the ALARA design responsibilities of individuals on the project. The ALARA guidance is derived from federal and commercial nuclear operating experience ~~at the BNFL Sellafield Site and~~as well as from industry standards such as NRC Regulatory Guide 8.8, *Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations will be As Low as is Reasonably Achievable* (NRC 1978) and DOE G 441.1-2, *Occupational ALARA Program Guide*. The ALARA guidance addresses considerations for reducing exposures within the RPP-WTP from operations and from final decommissioning activities. It also addresses considerations for reducing effluents from the RPP-WTP.

ALARA design criteria and ALARA design considerations are provided to project staff in controlled documents. These criteria and considerations are arranged by topic area (for example, General Criteria, Dose Criteria, Environmental Criteria, Facility Arrangement Considerations, Shielding Considerations, System Design Considerations, etc.). Design engineers are responsible for implementing and documenting ALARA design criteria and ALARA design considerations in their work. Supervisors are responsible for ensuring that individuals in the group are trained in ALARA criteria and considerations, and for reviewing designs against those criteria and consideration. The Configuration Management program also requires an ALARA review of proposed changes to the facility.

Periodic interdisciplinary project ALARA reviews are conducted to ensure that ALARA concepts are being integrated into the design and to discuss implementation of the ALARA design goal and the rationale for exceptions from specific ALARA design considerations.

In addition, collective exposure estimates assess projected exposures to provide insight into the sources of exposure and indicate areas that may require additional attention. The estimates are compared to those from similar operating facilities.

4.1.2 Identification of Safety Management Program Drivers

Through the SRD development process, the following safety management programs are identified that:

1) Directly implement regulatory requirements for programs that provide protection of the public and workers from radiological, nuclear, and process hazards (e.g., Risk Management Plan, Radiation Protection Program)
2) Are credited for providing adequate protection to the worker or public (e.g., Emergency Preparedness Program)
3) Place controls on the design, operations, or maintenance of structures, systems, and components (SSC) that are credited for providing adequate protection to the worker or public (e.g., Configuration Management, Conduct of Operations, Quality Assurance, Maintenance).

The following sections outline the programs and identify the SRD sections governing the development of the safety management programs for the RPP-WTP.

4.1.2.1 Nuclear and Process Safety Program

The Nuclear and Process Safety Program addresses the Project integrated approach to nuclear and process safety. It identifies the methodology and Safety Criteria for assessing that the risks posed by the operation of the RPP-WTP are within the overall safety objectives and commitments. The Nuclear and Process Safety Program addresses the following attributes: prevention of accidents, accident and operations risk goals, defense-in-depth, hazards analysis; accident analysis; and criticality. These programs are defined in the SRD Volume II, Chapters 1.0 “Radiological, Nuclear, and Process Safety Objectives”, and 3.0 “Nuclear and Process Safety”.

4.1.2.2 Engineering and Design Programs

The Engineering and Design Program provides the principles governing the design of and identifying design expectations for those SSCs credited for protection of the public and workers. The engineering and design programs include topics such as the configuration management of facility and system design, design practices and procedures for SSCs credited for protection of public and workers, and the facility’s fire protection program. These programs are defined in the SRD Volume II, Chapter 4.0, “Engineering and Design”.

4.1.2.3 Radiation Protection Program

The Radiation Protection Program ~~encompasses both Occupational Radiation Protection and Environmental Radiation Protection. Occupational Radiation Protection~~ addresses the protection of the public and workers (when accessing controlled areas) in accordance with 10 CFR 835, *Occupational Radiation Protection*. The Environmental Radiation Protection Program addresses the protection of the public and the environment from normal activities that may release radiological effluents. These programs are defined in the SRD Volume II, Chapter 5.0, “Radiation Protection”.

Table 4-1 Deviations from the Safety Analysis Report Content Guidance of Regulatory Guide 3.52 [1] (Sheet 2)

Chapters	Addition or Subtraction	Basis
4.7 Results of the Integrated Safety Assessment	The results for unmitigated accidents are compared to the radiological standards discussed in Integrated Safety Management Plan (ISMP) Section 1.2, "Detailed Description of the Safety Approach" rather than to 10 CFR 20, "Standards for Protection Against Radiation". A full assessment of the hazardous situations that might present themselves during facility operation is provided. This includes estimates of radiological and chemical releases for this range of events. Additional details are provided on the methodology used for consequence analysis, bounding conditions, input assumptions, and accident sequences.	The standards provided in RG 3.52 were derived from 10 CFR 20, "Standards for Protection Against Radiation", which is applicable to normal operation. The nature of the accidents for the RPP-WTP requires more discussion of consequence analysis than that required of fuel fabrication facilities.
4.8 Controls for Prevention and Mitigation of Accidents	This section identifies the specific safeguards selected for protection of the facility workers, as well as safeguards selected for protection of the public and collocated workers.	The nature of the accidents for the RPP-WTP requires more discussion of consequence analysis than that required for fuel fabrication facilities.
5.0 Radiation Safety	Chapter 5.0 provides the upper-level statutory standards and program policies that ensure the radiological safety of employees, visitors, and onsite members of the public. Deviations from RG 3.52 are as follows: 1) As an U.S. Nuclear Regulatory Commission (NRC) document, RG 3.52 references and specifies applicable portions of 10 CFR 20. Because 10 CFR 835 is the radiation safety regulation for the RPP-WTP, the focus of this section is on 10 CFR 835~~. Chapter 5.0 also addresses 10 CFR 20 to facilitate potential transition to the NRC as the regulator~~. 2) The implementation-level standards and guidance documents referenced in RG 3.52 is being incorporated into the Radiation Protection Plan (RPP).	Compliance with 10 CFR 835 is a requirement of the contract. The RPP required by 10 CFR 835 is required to include some of the information required of RG 3.52. There is no need to present this information in two documents.
5.1 As Low As Reasonably Achievable (ALARA) Policy and Program	RG 3.52 states that Regulatory Guide 8.10, Revision 1R (*Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As Reasonably Achievable)* should be used in the development of the ALARA program. ~~A modified version of the existing BNFL corporate ALARA program~~DOE guidance such as DOE G 441.1-2, *Occupational ALARA Program Guide* will also be used to develop the RPP-WTP ALARA program for normal operation~~. Section 5.1 discusses the experience with that program including the radiation exposure histories~~.	~~The BNI program has~~DOE practices have proven to be successful for facilities similar to the RPP-WTP.